

1.8. That is notwithstanding when the present document is actually received by the U.S.A. Patent Office.

* The rejection of the claims

Claims 5-7 and 9 are rejected under 35 U.S.C 103(a) as being unpatentable over Subramanian et al. (5,668,021) in view of Admitted Prior Art.

The rejection is respectfully traversed.

The rejection characterizes Subramanian's region 24 as somehow analogous to the present invention's impurity implantation region 54. The characterization is respectfully traversed.

Subramanian's buried junction 24 cannot be treated as a buried channel, formed in the surface channel, as described in the "Background of the Invention" section of Subramanian. If that were the case, then there is a problem in that the resulting channel length in Subramanian is too short, when compared to what the conventional prior art teaches is needed.

Referring to the specification of Subramanian, it is stated that the buried junction is formed by the ion implantation that is performed by self-aligning it with the first spacer. In reviewing the processes of forming the first spacer, the silicon nitride is deposited to a thickness of about 300 to 1000 angstroms, and the first spacer is formed by anisotropic etching.

Referring to FIG. 6, prior to the formation of the second spacer, the lightly doped source/drain 28, 30 are formed. It means that the channel is formed between the buried junction 24 and the lightly doped source/drain 28, 30, i.e., only the lower portion of the first spacer becomes substantial channel. In this case the channel length would be shorter than 300 to 1000 angstroms (0.03 to 0.1 um), before lateral diffusion in each of the junctions is considered. Accordingly, when the lateral diffusion of the junction is assumed to be 0.02 um, that will fill the region. The channel cannot be formed, thereby causing short between the source and the drain. In addition, even though the channel length is assumed to be about 0.1 um, punchthrough therebetween may be occurred, thereby such a device cannot be formed.

As such, it is respectfully requested that this rejection be withdrawn.

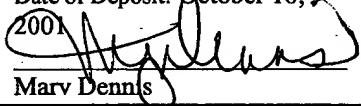


CONCLUSION

For the foregoing reasons, reconsideration and allowance of claims 5-7 and 9 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Asst. Comm. of Patents, Washington D.C. 20231

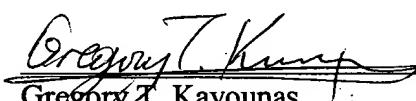
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Respectfully submitted,

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